

Fig. 1

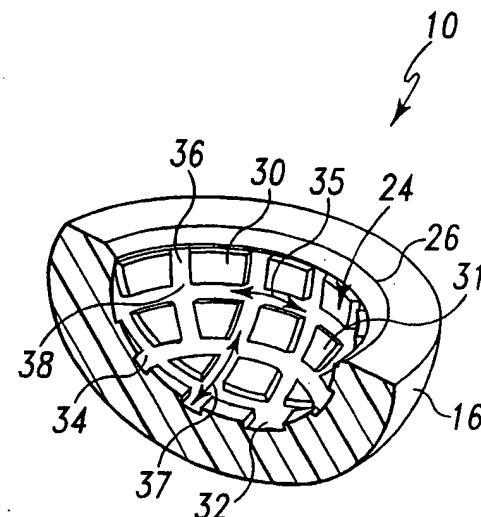


Fig. 2

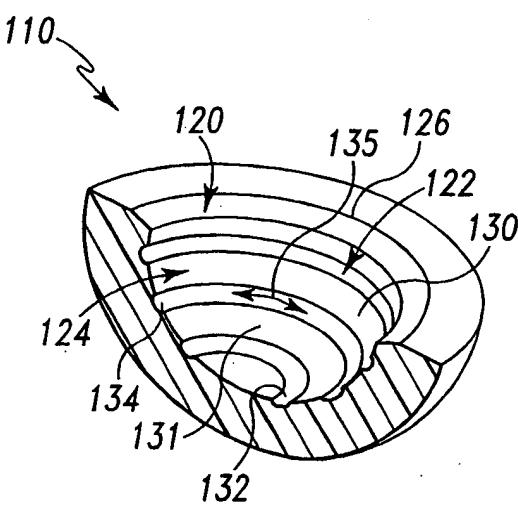


Fig. 3

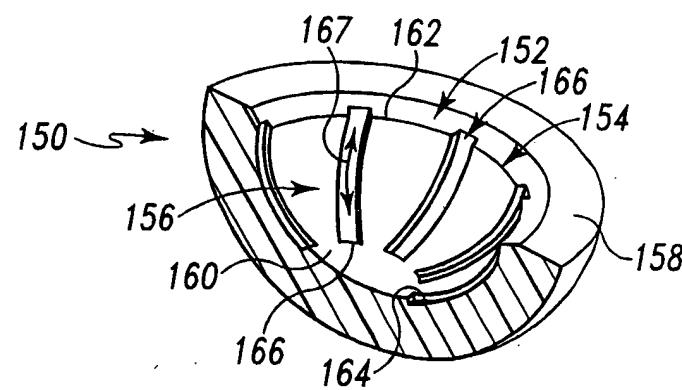


Fig. 4

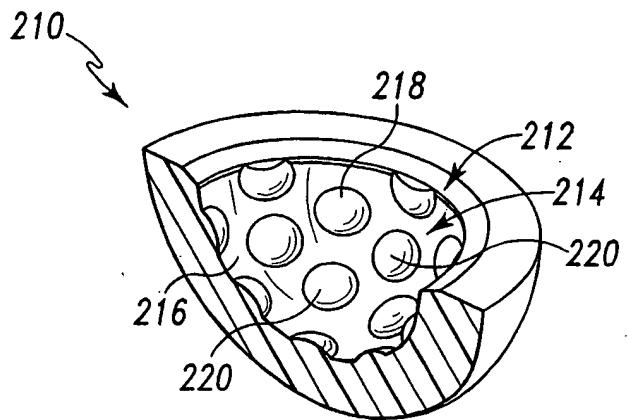


Fig. 5

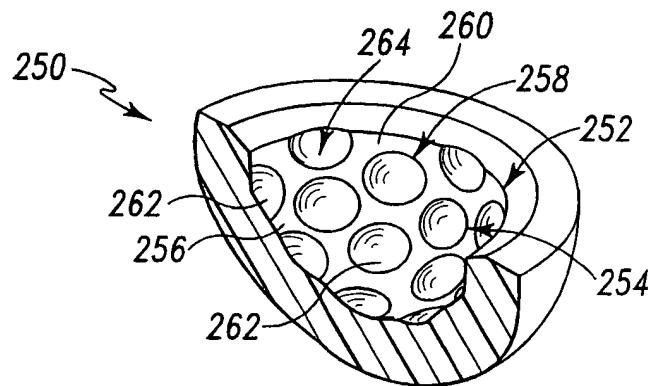


Fig. 6

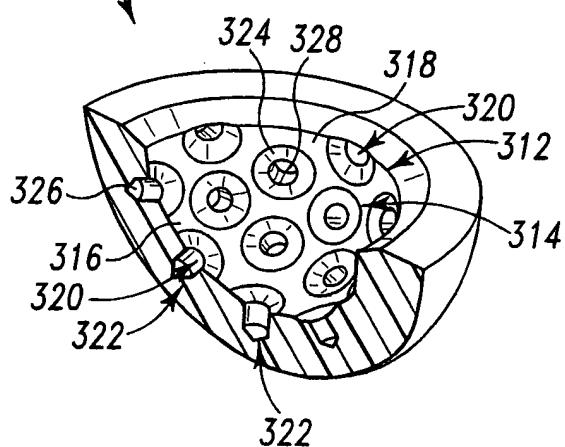


Fig. 7

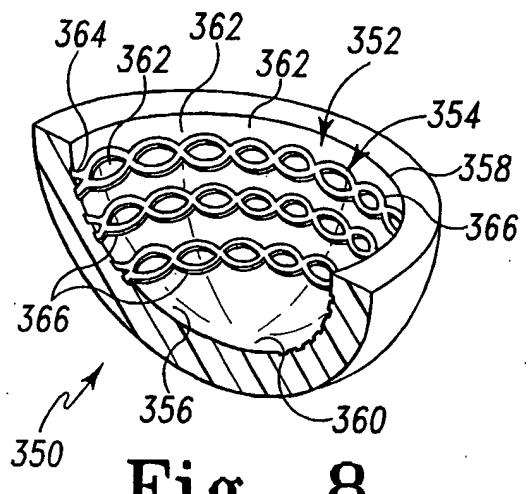


Fig. 8

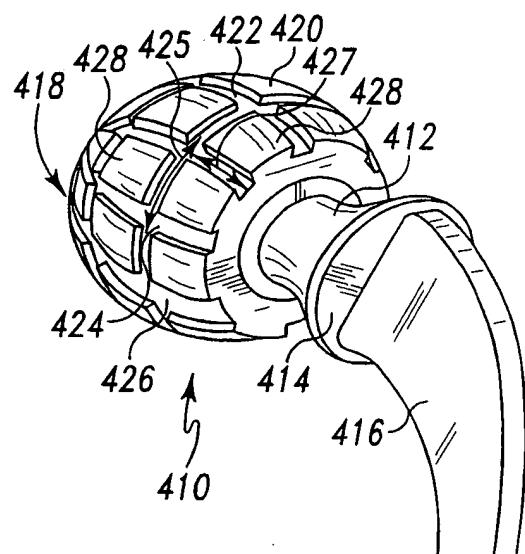


Fig. 11

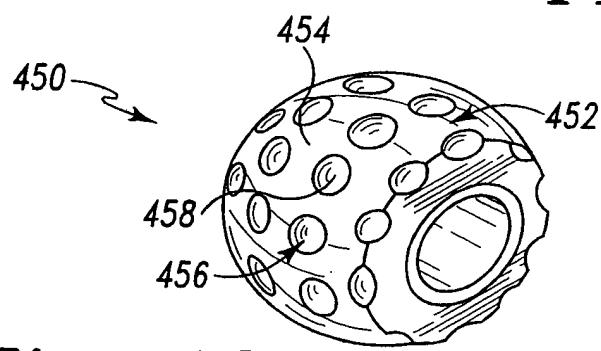


Fig. 12

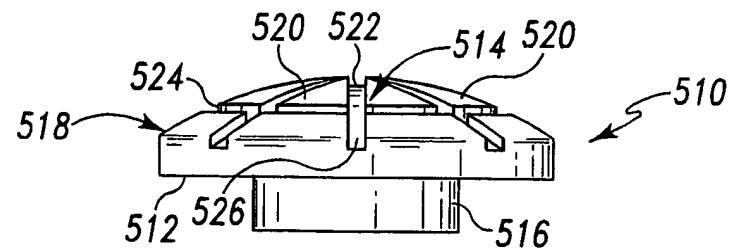


Fig. 13

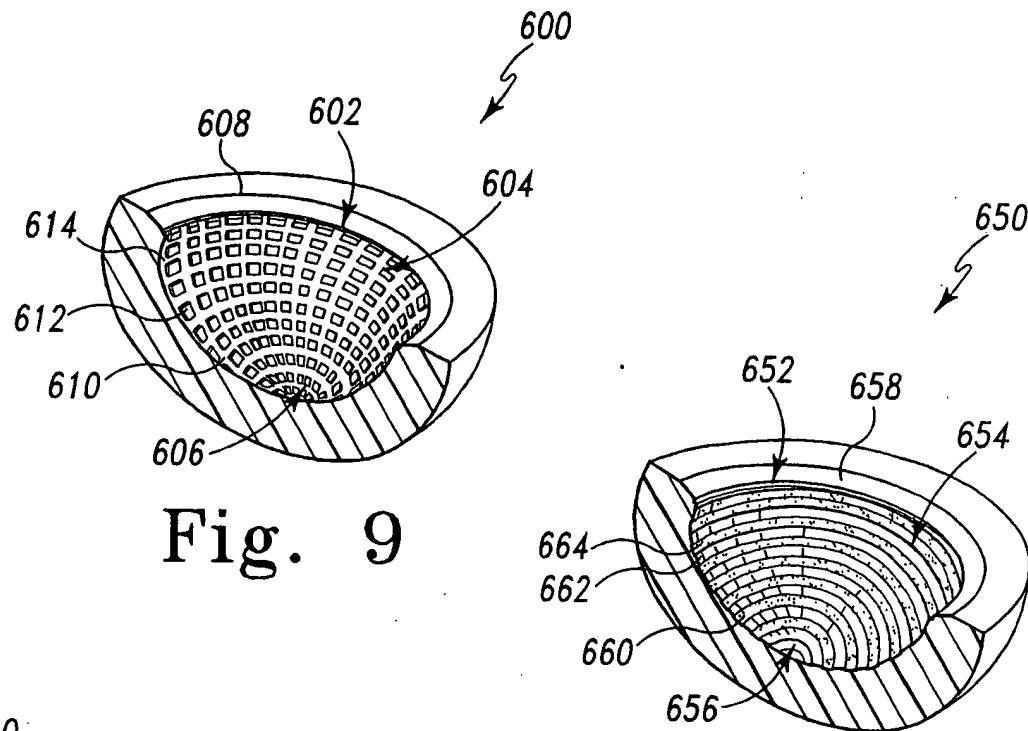


Fig. 9

Fig. 10

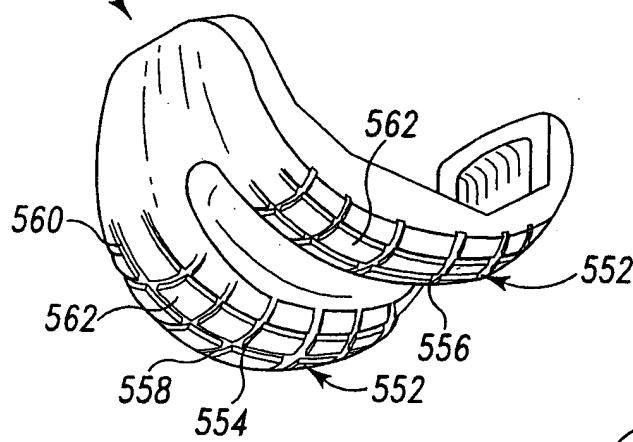


Fig. 14

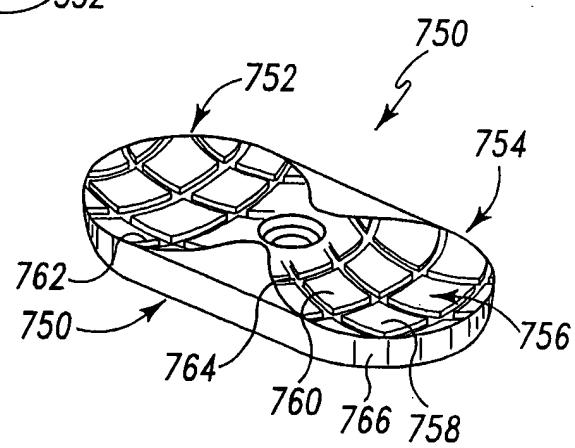


Fig. 15

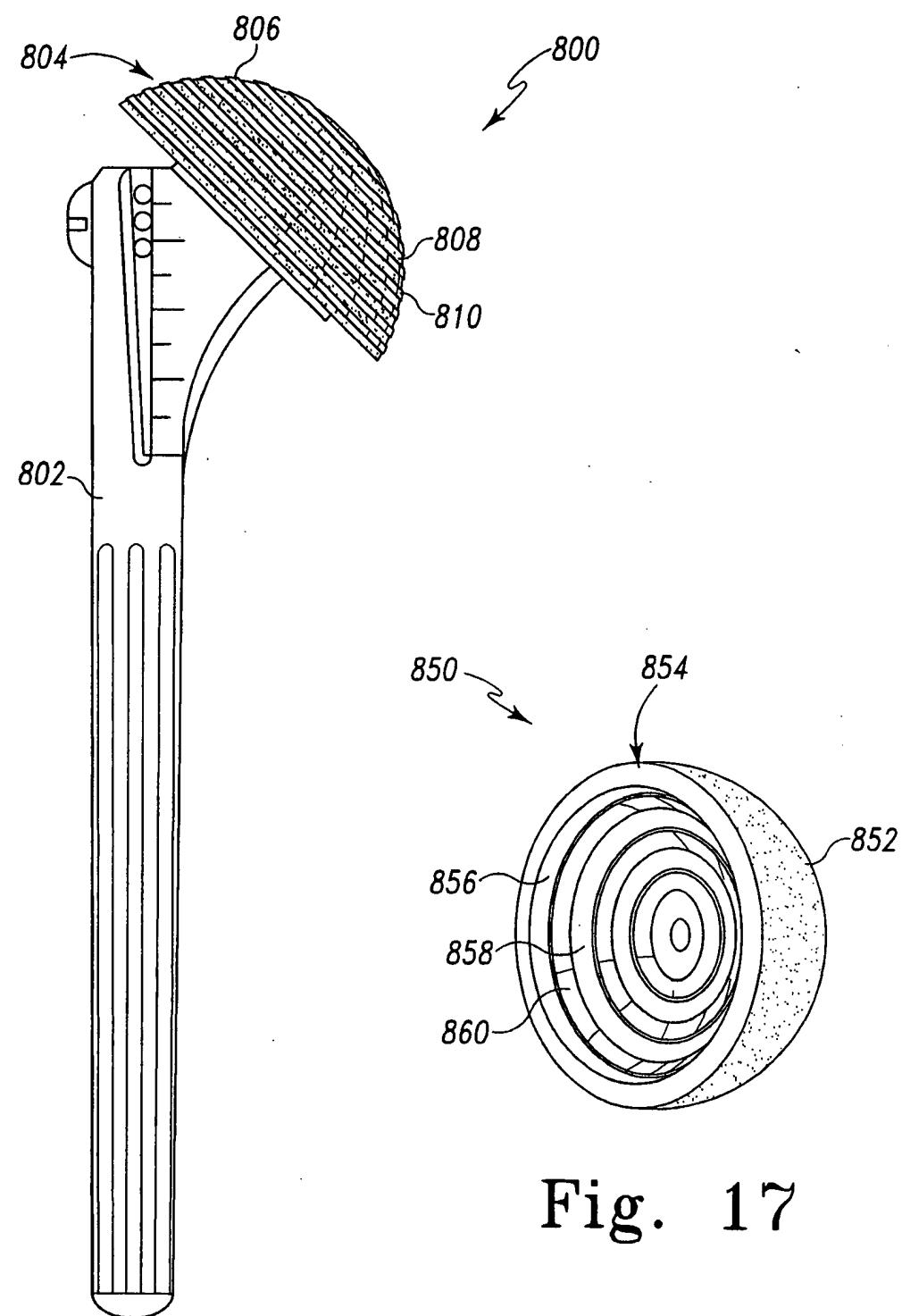


Fig. 18

930

COBALT CHROMIUM ON COBALT CHromium

Diameter (mm)	40 μm			60 μm			80 μm			100 μm			120 μm		
	Area (mm^2)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	Area (mm^2)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	Area (mm^2)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	Area (mm^2)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	Area (mm^2)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)
22	59.65	0.0	0.0	45.55			37.62			32.44			26.74		
23	63.29	5.7	0.44	48.32			39.91			34.42			30.49		
24	65.98	10.9	0.81	51.14			42.24			36.42			32.27		
25	70.72	15.7	1.13	54.00			44.60			38.45			34.07		
26	74.51	20.0	1.40	58.89			48.99			40.15			35.30		
27	78.36	23.9	1.63	59.83	0.3	0.02	49.41			42.60			37.74		
28	82.25	27.5	1.84	62.80	5.0	0.26	51.86			44.71			39.62		
29	86.18	30.8	2.01	65.80	9.4	0.47	54.34			46.85			41.51		
30	90.17	33.8	2.16	68.84	13.4	0.65	56.85			49.02			43.42		
31	94.19	36.7	2.29	71.91	17.1	0.81	59.39			51.20			45.36		
32	98.26	39.3	2.40	75.02	20.5	0.96	61.95	3.7	0.14	53.41			47.32		
33	102.38	41.7	2.50	78.16	23.7	1.08	64.55	7.6	0.29	55.65			49.30		
34	106.53	44.0	2.58	81.33	26.7	1.19	67.16	11.2	0.41	57.90			51.30		
35	110.73	45.1	2.65	84.53	29.4	1.29	69.81	14.6	0.53	60.18	0.9	0.03	53.31		
36	114.96	48.1	2.72	87.77	32.0	1.38	72.48	17.7	0.63	62.48	4.5	0.14	55.35		
37	119.24	50.0	2.77	91.03	34.5	1.46	75.17	20.6	0.72	64.80	8.0	0.24	57.41		
38	123.55	51.7	2.92	94.32	36.8	1.53	77.89	23.4	0.80	67.14	11.2	0.33	59.48		
39	127.90	53.4	2.98	97.64	38.9	1.59	80.63	26.0	0.88	69.51	14.2	0.41	61.57	3.1	0.08
40	132.29	54.9	2.99	100.99	40.9	1.65	83.39	28.5	0.94	71.89	17.0	0.49	63.68	6.3	0.16
41	136.72	56.4	2.92	104.37	42.9	1.69	86.18	30.8	1.00	74.29	19.7	0.55	65.81	9.4	0.23
42	141.18	57.8	2.94	107.77	44.7	1.74	88.99	33.0	1.06	76.72	22.3	0.62	67.96	12.2	0.30
43	145.68	59.1	2.96	111.21	46.4	1.78	91.83	35.0	1.11	79.16	24.6	0.67	70.12	14.9	0.36
44	150.21	60.3	2.98	114.67	48.0	1.81	94.68	37.0	1.15	81.62	26.9	0.72	72.50	17.5	0.42
45	154.78	61.5	2.99	118.15	49.5	1.84	97.56	38.9	1.19	84.10	29.1	0.77	74.50	19.9	0.47
46	159.38	62.6	3.00	121.66	51.0	1.87	100.46	40.6	1.23	86.60	31.1	0.81	76.74	22.2	0.51
47	164.01	63.6	3.01	125.20	52.4	1.99	103.38	42.3	1.26	89.12	33.1	0.85	78.94	24.4	0.56
48	168.68	64.6	3.01	128.76	53.7	1.91	106.32	43.9	1.29	91.65	34.9	0.88	81.18	26.5	0.60
49	173.38	65.6	3.02	132.35	54.9	1.93	109.28	45.4	1.32	94.20	36.7	0.92	83.44	28.5	0.63
50	178.11	66.5	3.02	135.96	56.1	1.94	112.26	46.9	1.34	96.77	38.4	0.95	85.72	30.4	0.66
51	182.87	67.4	3.02	139.60	57.3	1.96	115.26	48.3	1.36	99.36	40.0	0.97	88.01	32.2	0.69
52	187.57	68.2	3.01	145.25	58.4	1.97	118.28	49.6	1.38	101.96	41.5	1.00	90.31	34.0	0.72
53	192.49	69.0	3.01	146.94	59.4	1.98	121.32	50.8	1.40	104.58	43.0	1.02	92.63	35.6	0.75
54	197.35	69.8	3.01	150.64	60.4	1.99	124.38	52.0	1.41	107.22	44.4	1.04	94.97	37.2	0.77
55	202.24	70.5	3.00	154.37	61.4	1.99	127.46	53.2	1.43	109.87	45.7	1.06	97.32	38.7	0.79
56	207.15	71.2	2.99	158.12	62.3	2.00	130.56	54.3	1.44	112.54	47.0	1.07	99.63	40.2	0.81
57	212.10	71.9	2.99	161.90	63.2	2.00	133.68	55.4	1.45	115.22	48.2	1.09	102.06	41.6	0.83
58	217.07	72.5	2.98	165.69	64.0	2.01	136.81	56.4	1.46	117.93	49.4	1.10	104.45	42.9	0.85
59	222.07	73.1	2.97	169.51	64.8	2.01	139.96	57.4	1.47	120.64	50.6	1.12	106.86	44.2	0.86
60	227.11	73.7	2.96	173.35	65.6	2.01	143.13	58.3	1.48	123.57	51.7	1.13	109.28	45.4	0.88

BASELINE CONTACT AREA
MINIMUM % AREA OF RELIEF (COMPARED WITH UNINTERRUPTED BEARING SURFACE)
MINIMUM % AREA OF RELIEF (COMPARED WITH TOTAL ARTICULAR SURFACE)
MAXIMUM % AREA OF RELIEF (COMPARED WITH UNINTERRUPTED BEARING SURFACE)
MAXIMUM % AREA OF RELIEF (COMPARED WITH TOTAL ARTICULAR SURFACE)

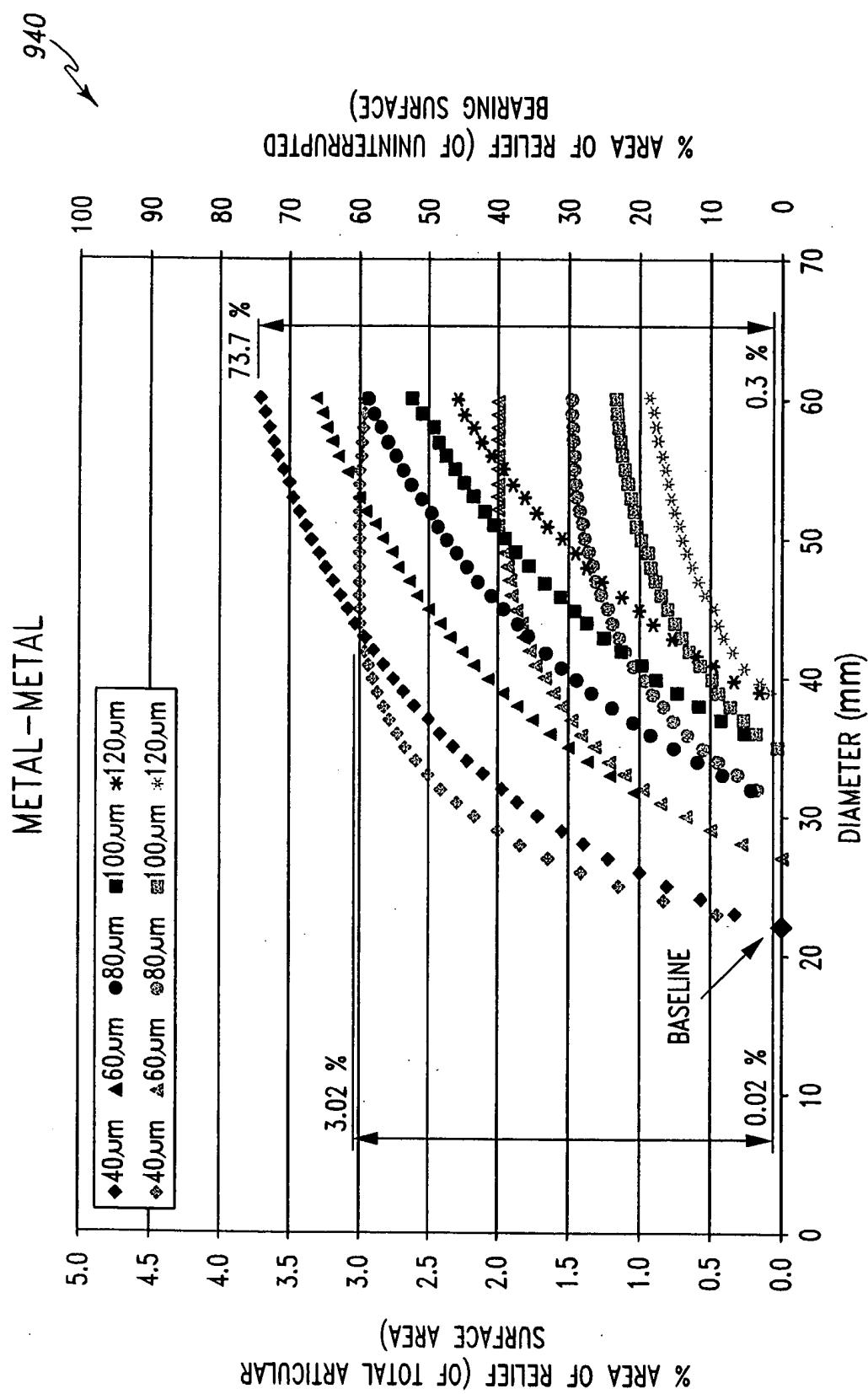


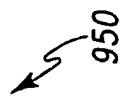
Fig. 19

CERAMIC ON CERAMIC

FREQUENCY (mm ⁻²)	40 μm			60 μm			80 μm			100 μm			120 μm		
	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	AREA (mm ²)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	AREA (mm ²)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	AREA (mm ²)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	AREA (mm ²)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	AREA (mm ²)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	AREA (mm ²)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	AREA (mm ²)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)
22	42.43	0.0	0.00	32.40			26.76			23.08			20.45		
23	45.02	5.7	0.31	34.38			28.39			24.48			21.69		
24	47.65	10.9	0.58	36.38			30.05			25.91			22.96		
25	50.31	15.7	0.80	38.41			31.73			27.36			24.24		
26	53.01	20.0	1.00	40.47			33.43			28.82			25.54		
27	55.74	23.9	1.16	42.56	0.3	0.01	35.15			30.31			26.85		
28	59.51	27.5	1.31	44.67	5.0	0.18	36.89			31.81			28.18		
29	61.31	30.8	1.43	46.81	9.4	0.33	38.68			33.33			29.53		
30	64.14	33.8	1.54	48.97	1.4	0.46	40.44			34.87			30.89		
31	67.01	36.7	1.65	51.16	7.1	0.58	42.25			36.42			32.77		
32	69.30	39.3	1.71	53.37	20.5	0.68	44.07			37.00			33.66		
33	72.33	41.7	1.78	55.60	23.7	0.77	45.92	7.6	0.20	39.39			35.07		
34	75.78	44.0	1.84	57.86	26.7	0.85	47.78	11.2	0.29	41.19			36.49		
35	78.77	46.1	1.89	60.13	29.4	0.92	49.66	14.6	0.38	42.81	0.9	0.02	37.93		
36	81.76	49.1	1.93	62.43	32.0	0.98	51.56	17.7	0.45	44.45	4.5	0.10	39.37		
37	84.32	50.0	1.97	64.76	34.5	1.04	53.47	20.6	0.51	46.10	8.0	0.17	40.84		
38	87.39	51.7	2.00	67.10	36.8	1.09	55.41	23.4	0.57	47.77	11.2	0.24	42.31		
39	90.99	53.4	2.03	69.46	38.9	1.13	57.36	26.0	0.62	49.45	14.2	0.29	43.80		
40	94.11	54.9	2.06	71.84	40.9	1.17	59.33	28.5	0.67	51.14	17.0	0.35	45.30	0.6	0.01
41	97.26	56.4	2.08	74.25	42.9	1.20	61.31	30.8	0.71	52.85	19.7	0.39	46.82	3.8	0.07
42	100.43	57.8	2.09	76.67	44.7	1.24	63.31	33.0	0.75	54.58	22.3	0.44	48.34	6.9	0.12
43	103.63	59.1	2.11	79.11	46.4	1.26	65.32	35.0	0.79	56.31	24.6	0.48	49.88	9.7	0.17
44	106.86	60.3	2.12	81.57	48.0	1.29	67.36	37.0	0.82	58.06	26.9	0.51	51.43	12.5	0.21
45	110.10	61.5	2.13	84.05	49.5	1.31	69.40	38.9	0.85	59.83	29.1	0.55	53.00	15.0	0.25
46	113.38	62.6	2.13	86.35	51.0	1.33	71.46	40.6	0.87	61.60	31.1	0.58	54.57	17.5	0.29
47	116.67	63.6	2.14	89.06	52.4	1.34	73.54	42.3	0.90	63.39	33.1	0.60	56.15	19.8	0.32
48	119.99	64.6	2.14	91.60	53.7	1.36	75.63	43.9	0.92	65.20	34.9	0.63	57.75	22.0	0.35
49	123.34	65.6	2.15	94.15	54.9	1.37	77.74	45.4	0.94	67.01	36.7	0.65	59.36	24.2	0.38
50	126.70	66.5	2.15	96.72	56.1	1.38	79.86	46.9	0.95	68.84	38.4	0.67	60.98	26.2	0.41
51	130.09	67.4	2.15	99.31	57.3	1.39	82.00	48.3	0.97	70.68	40.0	0.69	62.61	28.1	0.43
52	133.50	68.2	2.14	101.91	58.4	1.40	84.15	49.6	0.98	72.53	41.5	0.71	64.25	29.9	0.45
53	136.94	69.0	2.14	104.53	59.4	1.41	86.31	50.8	0.99	74.40	43.0	0.72	65.90	31.7	0.47
54	140.39	69.8	2.14	107.16	60.4	1.41	88.48	52.0	1.01	76.27	44.4	0.74	67.56	33.4	0.49
55	143.87	70.5	2.13	109.82	61.4	1.42	90.67	53.2	1.02	78.16	45.7	0.75	69.23	35.0	0.51
56	147.36	71.2	2.13	112.49	62.3	1.42	92.88	54.3	1.02	80.06	47.0	0.76	70.91	36.5	0.53
57	150.88	71.9	2.13	115.17	63.2	1.43	95.09	55.4	1.03	81.97	48.2	0.77	72.60	38.0	0.54
58	154.42	72.5	2.12	117.87	64.0	1.43	97.32	56.4	1.04	83.89	49.4	0.78	74.31	39.4	0.55
59	157.98	73.1	2.11	120.59	64.8	1.43	99.57	57.4	1.04	85.82	50.6	0.79	76.07	40.8	0.57
60	161.56	73.7	2.11	123.32	65.6	1.43	101.87	58.3	1.05	87.77	51.7	0.80	77.74	42.1	0.58

BASELINE CONTACT AREA
MINIMUM % AREA OF RELIEF (COMPARED WITH UNINTERRUPTED BEARING SURFACE)
MINIMUM % AREA OF RELIEF (COMPARED WITH TOTAL ARTICULAR SURFACE)
MAXIMUM % AREA OF RELIEF (COMPARED WITH UNINTERRUPTED BEARING SURFACE)
MAXIMUM % AREA OF RELIEF (COMPARED WITH TOTAL ARTICULAR SURFACE)

Fig. 20



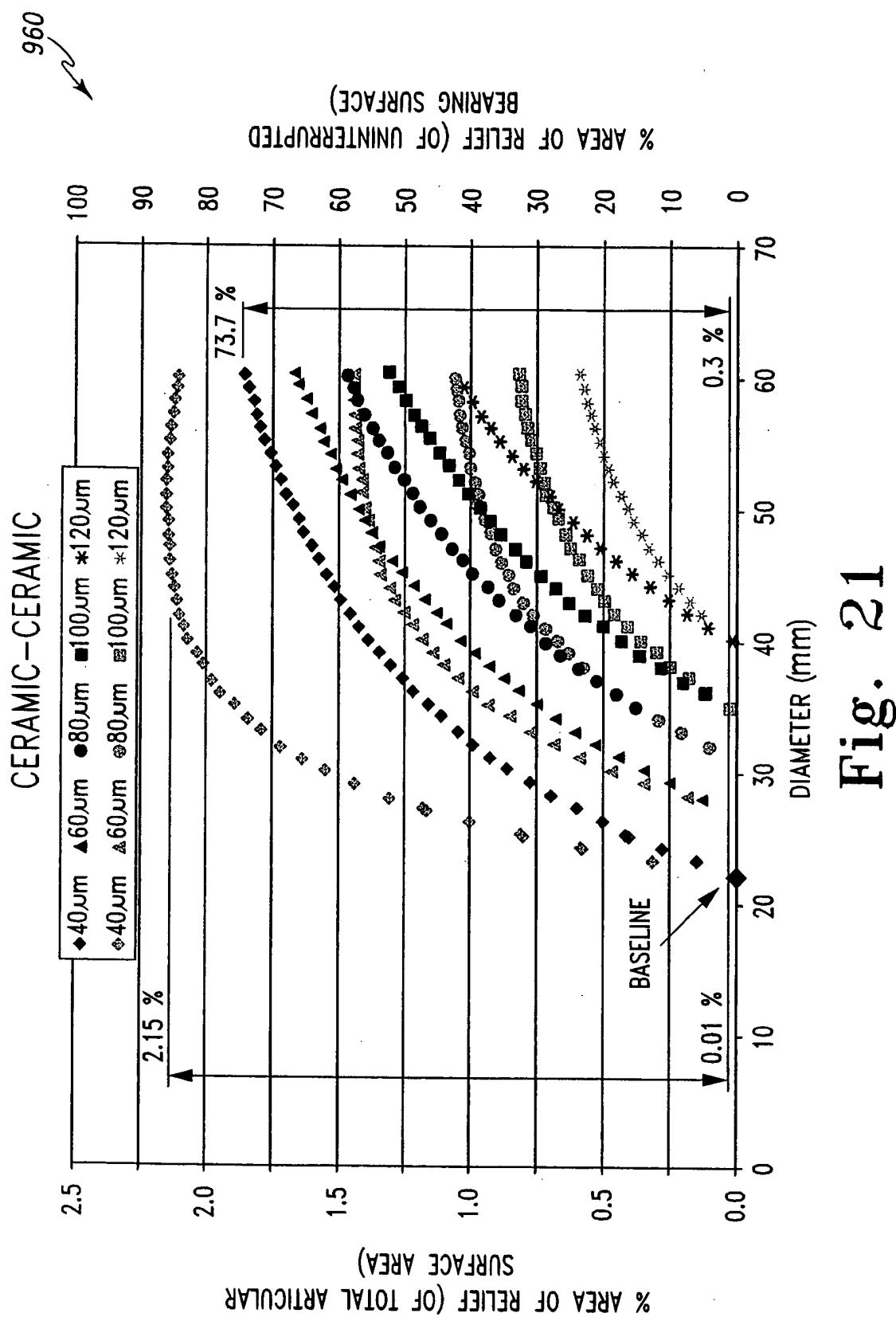


Fig. 21

Fig. 22

COBALT CHROMIUM ON POLYETHYLENE

Diameter (mm)	300 μm			400 μm			500 μm			600 μm		
	Area (mm^2)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	Area (mm^2)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	Area (mm^2)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	Area (mm^2)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)	Area (mm^2)	% AREA OF RELIEF (OF TOTAL ARTICULAR SURFACE AREA)	Area (mm^2)	% AREA OF RELIEF (OF UNINTERRUPTED CONTACT AREA)
22	504.69	36.4	24.19	417.85	25.2	12.77	361.17	11.2	5.31	320.78	0.0	0.00
23	535.29	40.1	25.82	443.14	27.6	14.73	382.97	16.2	7.49	340.10	5.7	2.33
24	566.34	43.4	27.14	488.79	31.6	16.36	405.09	20.8	9.32	339.71	10.3	4.30
25	597.83	46.3	28.22	49.80	35.2	17.73	427.52	25.0	10.87	379.58	15.5	5.98
26	629.73	49.1	29.10	521.15	39.4	18.37	450.25	28.8	12.19	339.72	19.7	7.43
27	662.04	51.5	29.80	547.84	41.4	19.83	473.26	32.2	13.32	420.11	23.6	8.67
28	694.76	53.8	30.37	574.86	44.2	20.63	496.56	35.4	14.27	440.76	27.2	9.74
29	727.86	55.9	30.82	602.20	46.7	21.30	520.14	38.3	15.09	461.65	30.5	10.66
30	761.34	57.9	31.16	619.85	49.1	21.56	533.98	41.9	15.79	482.77	33.6	11.46
31	795.19	59.7	31.43	657.82	51.2	22.33	568.09	43.5	16.38	504.14	36.4	12.15
32	829.41	61.3	31.67	686.08	53.2	22.71	592.46	45.9	16.89	525.73	39.0	12.74
33	863.99	62.9	31.76	714.63	55.1	23.03	617.08	48.0	17.32	547.54	41.4	13.26
34	898.91	64.3	31.84	743.48	56.9	23.28	641.95	50.0	17.69	569.58	43.7	13.70
35	934.18	65.7	31.98	772.60	58.5	23.48	667.06	51.9	18.00	591.83	45.3	14.09
36	969.78	66.9	31.88	802.01	60.0	23.64	692.42	53.7	18.26	614.29	47.8	14.42
37	1005.72	68.1	31.85	831.68	61.4	23.76	718.00	55.3	18.47	636.95	49.6	14.70
38	1041.97	69.2	31.80	861.63	62.8	23.85	743.82	56.9	18.65	659.83	51.4	14.95
39	1078.55	70.3	31.72	891.83	64.0	23.90	769.86	58.3	18.80	682.90	53.0	15.16
40	1115.44	71.2	31.62	922.30	65.2	23.93	796.12	59.7	18.91	706.17	54.6	15.33
41	1152.63	72.2	31.50	935.01	66.3	23.94	822.60	61.0	19.01	729.63	56.0	15.48
42	1190.13	73.0	31.38	933.98	67.4	23.94	849.30	62.2	19.07	753.28	57.4	15.61
43	1227.33	73.9	31.23	1015.19	68.4	23.91	876.21	63.4	19.12	777.12	58.7	15.71
44	1266.02	74.7	31.08	1046.65	69.4	23.87	903.33	64.5	19.16	801.14	60.0	15.80
45	1304.40	75.4	30.92	1072.34	70.3	23.82	930.65	65.5	19.17	825.34	61.1	15.86
46	1343.06	76.1	30.76	1101.27	71.1	23.75	958.17	66.5	19.18	849.72	62.2	15.91
47	1382.90	76.8	30.58	1122.42	71.9	23.68	985.90	67.5	19.17	874.28	63.3	15.95
48	1421.22	77.4	30.41	1174.81	72.7	23.60	1013.81	68.4	19.15	899.02	64.3	15.98
49	1460.71	78.0	30.23	1207.42	73.4	23.51	1041.93	69.2	19.12	923.92	65.3	15.99
50	1500.47	78.6	30.04	1240.25	74.1	23.41	1070.23	70.0	19.09	948.99	66.2	16.00
51	1540.50	79.2	29.85	1273.30	74.8	23.31	1098.72	70.8	19.04	974.23	67.1	15.99
52	1580.78	79.7	29.67	1305.57	75.4	23.21	1127.40	71.5	18.99	999.64	67.9	15.98
53	1621.33	80.2	29.48	1340.05	76.1	23.10	1156.26	72.3	18.94	1025.20	68.7	15.97
54	1662.13	80.7	29.29	1375.74	76.6	23.09	1185.30	72.9	18.97	1050.93	69.5	15.94
55	1703.18	81.2	29.09	1407.84	77.2	23.07	1214.53	73.6	18.81	1076.81	70.2	15.91
56	1744.48	81.6	28.90	1441.74	77.8	23.06	1243.92	74.2	18.74	1102.86	70.9	15.88
57	1786.35	82.0	28.71	1476.05	78.3	23.04	1273.50	74.8	18.67	1129.05	71.6	15.84
58	1827.82	82.5	28.52	1510.56	78.8	23.02	1303.24	75.4	18.59	1155.40	72.2	15.80
59	1869.85	82.8	28.33	1545.26	79.2	23.00	1333.16	75.9	18.52	1181.90	72.9	15.75
60	1912.12	83.2	28.14	1580.16	79.7	22.27	1363.25	76.5	18.44	1208.55	73.5	15.70

MINIMUM % AREA OF RELIEF (COMPARED WITH UNINTERRUPTED BEARING SURFACE)
 MAXIMUM % AREA OF RELIEF (COMPARED WITH TOTAL ARTICULAR SURFACE)
 MEDIUM % AREA OF RELIEF (COMPARED WITH UNINTERRUPTED BEARING SURFACE)



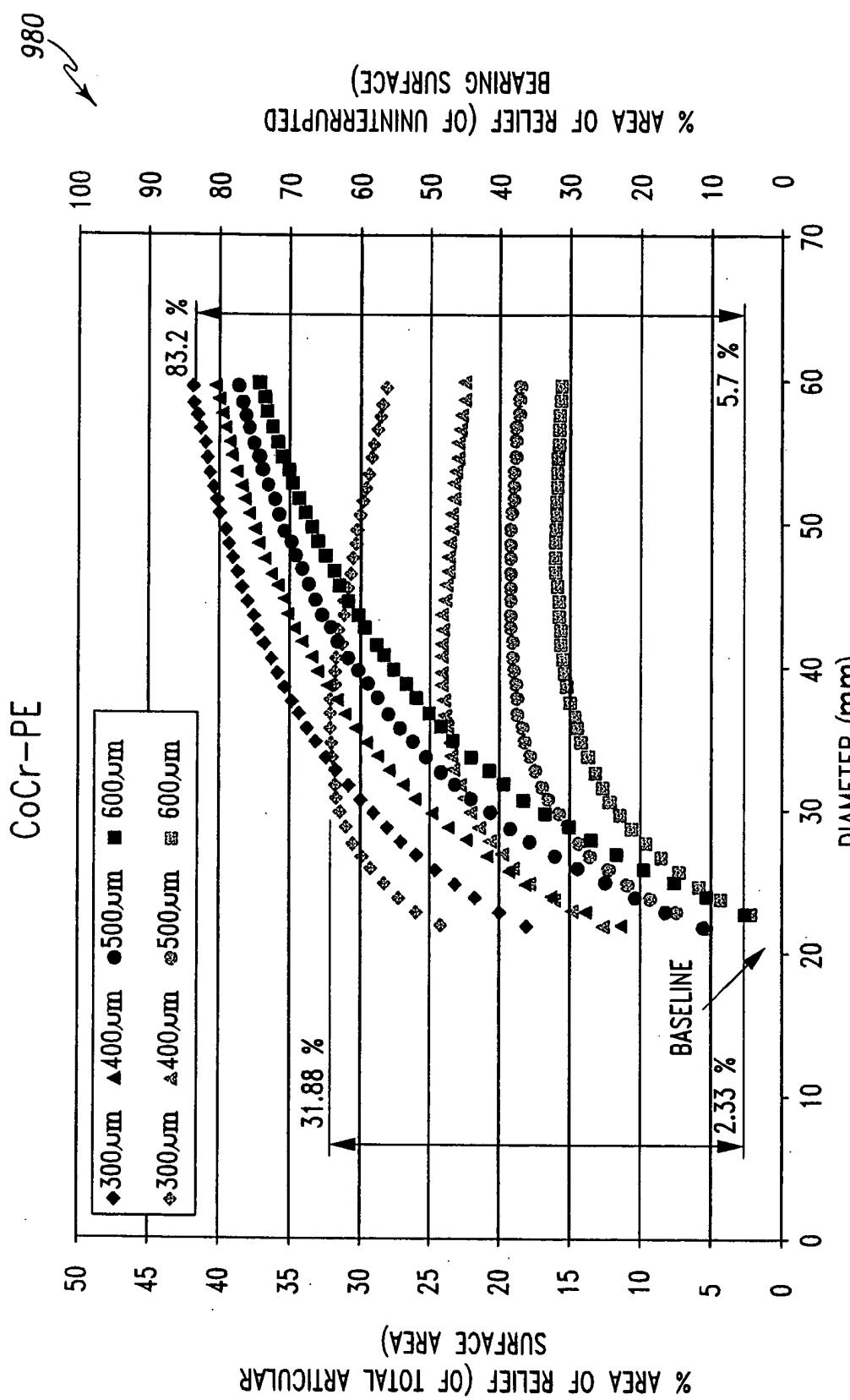


Fig. 23